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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/783,112

02/14/2001

Josh N. Hogan

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06/03/2004

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
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EXAMINER

SEAL, JAMES

ART UNIT

PAPER NUMBER

2135

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/783,112

Applicant(s)

HOGAN, JOSH N.

Examiner

James Seal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 10 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 10 and 26-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. This Action is in response to applicant's correspondence of 23 March 2004.
2. Amendment to the specification has been entered.
3. Claims 1, 10, 26-28 are pending.

#### ***Oath/Declaration***

4. The Oath/Declaration submitted with application does not contain

It does not state that the person making the oath or declaration has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration.

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

#### ***Specification***

5. With the Amendment to the specification, the examiner withdraws his objection.

#### ***Drawings***

6. With regards to Figure 1, it is not clear as to which element 10 refers. Examiner suggest a dotted line enclose the elements of the drawing which 10 refers or in some other way indicate perhaps by placement to better indicate what it is suppose to be referenced.

#### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1, 10, 26-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Monroe et. al. US 5293388 A, and further in view of Davis US 5825879 A and Barnes et. al. US 4172213 A.

9. As per claim 1, the limitation of a system comprising a bus see Monroe Figure 1-3, element 20, column 1, lines 17-25. The limitation of a host processor connected to the bus is disclosed by Monroe see element 80 (CPU) Figure 3. The limitation that the host processor (CPU) is programmed to perform error code correction is disclosed Column 7, lines 62-64. The limitation of a peripheral drive (and thus a means of supplying compressed ECC data to the processor) is disclosed in Monroe Column 1, lines 44-45; Figure 3, elements 50 and 50A. The limitation that the provides blocks of ECC encoded data is disclosed in Monroe Column 1, lines 56-57. Monroe is silent on the limitation that the data, in addition to being compressed and error corrected, is encrypted.

10. Davis discloses a disk drive (peripheral) with compressed encrypted data stored on the disk for reason of DVD copy protection for example see PC platform (Column 1, lines 38-40 and Figure 4 see element 412, 416, 424. The basic layout is the same as Monroe (see Davis Figure 1, host process 104, disk controller 108, compressed (encrypted) data 120, and data bus 128) with the additional element of the SVCP a hardware security device for decryption and decompression of the disk (CD ROM) data see elements 228 and 220 Figure 2. Davis further teaches the encryption of block data (Column 6, lines 5-9). It is inherent in Davis, that means for handling compressed ECC data exist as the Thus it would have been obvious to one of ordinary skill in the art at

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the time the made, to have modified the invention of Monroe with the teaching of Davis to provide encrypted compressed data for displaying DVD which are high resolution (therefore ECC) high data density (compressed) and encrypted (because of the copy-protection, movies see Davis Column 1, lines 32-43; or intellectual property control such as software). Davis is silent about the type of encryption used in particular a stream ciphers represented by a bitwise XOR.

11. Barnes discloses a encryption system for the insertion between data sets without modifying the control commands and communications protocols of the central processing unit Barnes Column 2, lines 31-39. This is accomplished by using an exclusive or (XOR) in which the "key" produces the original plaintext Barnes Column 6, lines 1-4; lines 24-28 ; and Figure 1, Figure 7, (input output XOR and key bits), Column 7 under encryption mode lines 14-16 (an XOR has the useful property that  $(X \oplus Y) \oplus Y = X$  that is it is it's own inverse). Barnes extends the concept to selective (or partial encryption) thus allowing on part of the text to be encrypted and some not. This is often used in Try-before-you-buy software or sanitized FAX etc. . It would have been obvious to one of ordinary skill in the art at the time that the invention was made to have modified the Monroe/Davis which teaches the handling of encrypted, compressed data which employs the error correction protocols of Reed-Solomon, with the teaching of Barnes use of the XOR stream cipher encryption which allows the use of communication protocols without modifications because it would allow the error correction of Monroe to run in-tack while maintaining the security needed for copy-protection required by Davis. Thus the limitation that the XORed mask (stream

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encryption) ECC encoded data can be sent via the bus (element 20 figure 1 of Monroe) for error correction is met. Claim 1 is rejected.

**12.** As per claim 10, the limitation of performing ECC in the host processor is disclosed by Monroe Column 7, lines 62-64 such that the data is encrypted is disclosed by Barnes Column 2, lines 31-39. Claim 10 is rejected.

**13.** As per claim 26, the limitation of a system composed of a computer bus see Figure 3 element 20. The limitation of a host processor programmed to perform error code correction see Monroe Figure 3 element 80 and Column 7, line 62-64. The limitation of a drive Monroe Figure 3, element 50 and Column 1, lines 44-45 which provides data XORed with communication protocols including ECC (Barnes Column 2, lines 31-39) to the computer bus (Monroe Figure 3 element 20) to be delivered to the host CPU for error correction. Claim 26 is rejected.

**14.** As per claim 27, the limitation of a drive comprising a reader (Monroe Figure 3, element 50) with controller Monroe Column 7, lines 60-64 performing ECC on the encrypted XORed data Barnes Column 2, lines 31-39, to be outputted as a result of the controller Column 8, lines 6-9. Claim 27 is rejected.

**15.** As per claim 28, Monroe discloses a CPU and controller for performing ECC and compression and decompression function (Column 4, lines 39-47, Davis performs encryption a Secure Video content processor (Figure 2), and finally Barnes provides a bitwise XOR to create an encryption mask. It would have been obvious for one of ordinary skill in the art at the time the invention was made to have combined all of the functions plus I/O into a single processor (controller) because a single chip (controller)

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are cheaper, faster, as all computations are done inside a single chip and more easily to secure (that is make tamper resistance). Claim 28 is rejected

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Response to Arguments***

In response to applicant's argument that Monroe does not teach bitwise XOR, block encryption, that Davis does not teach compression of data and data encryption and that Barnes does not teach ECC coded and that SOR encryption is performed on the ECC coded data, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

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16. With regards to Monroe teaching, the applicant is apparently basing his arguments on the fact that one particular example of a peripheral method by Monroe was a tape backup device and then argues such would means even though Monroe teaches "An architecture for providing hardware compression/decompression with ECC to data flow in a computer system" "the CPU and DMA controller in the host computer are capable of providing concurrent processing for hard disk operation, peripheral control compression/decompression of data and error correction of the compressed data" (see for example Abstract) that this would imply the operation was one dimensions and was not sending data of this type to the processor. However, in the same sentence that tape backup system Monroe also mentions another disk, which would indicate that Monroe system applies to take coming in both direction. In another place he also teaches for a peripheral device a modem which again is a bidirection device. Further restricting the term peripheral to mean only a tape backup is somewhat limited. Monroe allows for multiple peripheral (see Figure 3, 50, 50A) and for modern computers with the development of USB ports we may have any number of different types of peripherals such as printers, scanners, audio systems, digital cameras, DVD, etc. Most of these devices are bi-directional, some use data compressed and ECC as standards because of the large amounts of data being transferred.

17. Davis also discloses a method for controlling compressed encrypted data to the host (Figure 2, elements 212, 228). Further he discloses Column 1, lines 37-40 compressed encrypted data content on a DVD in a MPEG format. Part of MPEG



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specification is error correction ECC. Thus Davis teaches compressed encrypted ECC data, to a host processor(s).

18. The limitation of a bitwise XOR is definitely taught by Barnes Figure 7. A key bit enters the XOR and is applied to input data (plaintext) to output ciphertext. In the discussion of the Encryption Mode (Column 13, lines 14-16) Barnes states "each plain text input bit is exclusive XORed with a key bit and sent as the output cipher bit". This would constitute bitwise encryption. The Barnes reference was only used for this teaching and was not as suggested by applicant to embodied the entire invention. The applicant states that the office action suggests that the data storage in Figure 1, however, the reference was to figure 1 in Monroe as stated in the office action. No figure in Barnes was evoked.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Seal whose telephone number is 703 308 4562. The examiner can normally be reached on M-F, 8-5.

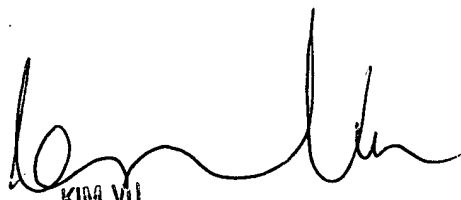
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 703 305 4393. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWS

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Examiner AU 2135  
28 May 2004

  
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SUPERVISORY PATENT EXAMINER  
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